



Projecting future heat-related mortality under climate change scenarios: A systematic review

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Abstract:

Background: Heat-related mortality is a matter of great public health concern, especially in the light of climate change. Although many studies have found associations between high temperatures and mortality, more research is needed to project the future impacts of climate change on heat-related mortality. **Objectives:** We conducted a systematic review of research and methods for projecting future heat-related mortality under climate change scenarios. **Data sources and extraction:** A literature search was conducted in August 2010, using the electronic databases PubMed, Scopus, ScienceDirect, ProQuest, and Web of Science. The search was limited to peer-reviewed journal articles published in English from January 1980 through July 2010. **Data synthesis:** Fourteen studies fulfilled the inclusion criteria. Most projections showed that climate change would result in a substantial increase in heat-related mortality. Projecting heat-related mortality requires understanding historical temperature-mortality relationships and considering the future changes in climate, population, and acclimatization. Further research is needed to provide a stronger theoretical framework for projections, including a better understanding of socioeconomic development, adaptation strategies, land-use patterns, air pollution, and mortality displacement. **Conclusions:** Scenario-based projection research will meaningfully contribute to assessing and managing the potential impacts of climate change on heat-related mortality.

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Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES), Other Climate Scenario

Special Report on Emissions Scenarios (SRES) Scenario: SRES A2, SRES B1, SRES B2

Other Climate Scenario: A1B; PCM1-B1; A1FI; IS92a; GCMS scenarios

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Temperature

Temperature: Extreme Cold, Extreme Heat

Climate Change and Human Health Literature Portal

Geographic Feature:

resource focuses on specific type of geography

Freshwater, Ocean/Coastal, Rural, Tropical, Urban

Geographic Location:

resource focuses on specific location

Global or Unspecified, Non-United States, United States

Non-United States: Africa, Asia, Australasia, Europe, Central/South America, Non-U.S. North America

African Region/Country: African Country

Other African Country: Mauritius

Asian Region/Country: China, Other Asian Country

Other Asian Country: Singapore; Japan

European Region/Country: European Country

Other European Country : Greece; Spain; Hungary; Ireland; Finland; Slovenia; United Kingdom; Italy; France; Czech Republic; Sweden; Switzerland; Portugal; Netherlands; Croatia

Health Impact:

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Model/Methodology:

type of model used or methodology development is a focus of resource

Exposure Change Prediction, Outcome Change Prediction

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type:

format or standard characteristic of resource

Research Article, Review

Socioeconomic Scenario: SES scenarios

Timescale:

time period studied

Long-Term (>50 years)